Table 9. Rated research status of academic research instruments, by system rating, field of science and engineering, and major type of instrument: 1993

[Percent of systems]

System rating and field of science and engineering	Major type of instrument					
	All instruments	Computers and data handling instruments	Chromatographs and spectrometers	Microscopy instruments	Bioanalytical instruments	Other instruments
State-of-the-art[1]	27%	14%	28%	31%	27%	34%
Engineering	32	16	38	23	19	38
Chemistry	19	12	20	17	S	20
Physics/astronomy	27	5	32	28	55	33
Environmental sciences	28	12	29	45	42	36
Computer science	9	10	0	0	0	2
Academic departments	9	11	0	0	0	3
Computer facilities	7	8	0	0	0	0
Agricultural sciences	16	30	10	S	22	14
Biological sciences	28	21	29	32	26	39
Other, multidisciplinary	28	7	66	32	S	24
Adequate to meet researchers needs[1]	63	63	63	63	70	60
Engineering	59	66	59	72	79	55
Chemistry	63	38	63	73	S	73
Physics/astronomy	62	66	64	69	45	60
Environmental sciences	64	74	64	52	50	59
Computer science	54	50	0	0	0	77
Academic departments	64	59	0	0	0	85
Computer facilities	31	31	0	0	0	S
Agricultural sciences	68	20	73	S	74	73
Biological sciences	67	67	66	62	71	59
Other, multidisciplinary	69	84	28	66	S	74
Inadequate to meet researchers needs[1]	9	23	9	5	3	6
Engineering	9	18	3	5	2	7
Chemistry	18	50	17	10	0	7
Physics/astronomy	11	28	4	4	0	8
Environmental sciences	8	14	7	2	8	5
Computer science	37	40	0	0	0	21
Academic departments	27	30	0	0	0	13
Computer facilities	62	61	0	0	0	S
Agricultural sciences	16	51	17	0	4	14
Biological sciences	5	12	6	6	3	2
Other, multidisciplinary	3	9	6	2	0	2

[1] The question was worded: "The research status of this equipment in FY 1993 was:

(1) State-of-the-art: the most highly developed and scientifically sophisticated equipment of its kind
(2) Not state-of-the-art, but adequate to meet the needs of researchers in this department/facility
(3) Not state-of-the-art; inadequate to meet the needs of researchers in this department/facility."

NOTES: Data in this table were not collected for supersystems, which are large, integrated instrumentation systems/facilities generally with an aggregate purchase price of $1 million or more.

The percents in this table are based on total number of instruments per major type of instrument.

Because of rounding, percents may not add to 100.

KEY: S = fewer than 10 cases for analysis

SOURCE: National Science Foundation/SRS, Survey of Academic Research Instruments and Instrumentation Needs: 1993